veloping the photosphere he had abundantly demonstrated in the winter of 1850-51, from a discussion of all the observations extant (" History," pp. 395, 396). It can excite no surprise that Prof. Grant assumed the red layer and also the prominences to shine by reflected light, when it is recollected that the sun's light and heat were then supposed to originate wholly in the photosphere while the nucleus was thought to be so cool as possibly to be habitable. When Prof. Grant took charge of the Glasgow Observatory the only useful instrument he found was the transit-circle by Ertel and Son, of Munich, but through the liberality of a few friends, chiefly in Glasgow, a nine-inch Cooke Equatorial was added to the Observatory some years afterwards. After thoroughly testing the transit-circle the new director commenced a series of observations of Mercury, Neptune, the minor planets, and a selection of stars from the British Association Catalogue. Gradually, however, his attention was concentrated entirely on the stars. the list being correspondingly expanded. The observations of planets were communicated from time to time to the *Astronomische Nachrichten* or to the " Monthly Notices."

The stellar observations were published at the expense of her Majesty's Government in 1883 in the well-known "Catalogue of 6415 Stars for the epoch 1870, deduced from Observations made at the Glasgow University Observatory during the years 1860 to 1881, preceded by a Synopsis of the Annual Results of each Star arranged in the order of Right Ascension."

In the introduction will be found a discussion of the Proper Motions of 99 stars. A very complete and appreciative review of this work from the pen of Prof. Auwers of Berlin appeared in the *Vierteljahrsschrift der Astronomischen Gesellschaft* (19 Jahrgang). The Glasgow star places were at once looked on with confidence by the numerous observers of comets and minor planets. One point connected with the Catalogue deserves special mention, viz. that, although the observations from which it is derived extend over a space of twenty-one years, the work appeared within two years of the close of the series. This promptitude excites the greater admiration when we learn that, exclusive of Prof. Grant's personal share in the work, no less than thirteen young assistants at various times took part in the observations, and two others in the computations. Many of these personal changes, each of which brought its quota of extra work to Prof. Grant, were no doubt in some measure due to the smallness of the allowance provided for assistance, viz. £100 per annum. Prof. Grant, however, was the last man to waste his energies in useless complaint, and dismisses this point with the remark that "in recent years the work of scrutinizing, reducing to a common epoch, and combining together the vast mass of the observations of the catalogue, extending over a period of more than twenty-one years, has pressed very heavily upon the slender resources of the observatory." The important time service of the City of Glasgow was originated by Prof. Grant some thirty years ago, and continues in operation up to the present moment. In 1855 he received from the University of Aberdeen the degree of M.A., followed by that of the honorary LL.D. in 1865, in which latter year he was elected a Fellow of the Royal Society of London. For three years he presided over the Philosophical Society of Glasgow, to whose proceedings he made various contributions. It may also be noted that among his writings are two remarkable letters proving beyond a shadow of a doubt the spurious character of the pretended Pascal correspondence. These letters were printed in the *Comptes Rendus* by special permission of the French Academy.

In manner Prof. Grant was singularly vivacious, and to the last he greeted with the warmest enthusiasm every fresh discovery in the science to which his life was devoted. R. C.

NOTES.

THE following is the list of names recommended by the President and Council of the Royal Society for election into the Council for the year 1893. The ballot will take place at the anniversary meeting on November 30 :—President, The Lord Kelvin, D.C.L., LL.D. ; treasurer, Sir John Evans, K.C.B., D.C.L., LL.D. ; secretaries, Prof. Michael Foster, The Lord Rayleigh, D.C.L. ; foreign secretary, Sir Archibald Geikie, LL.D. ; other members of the Council, Captain William de Wiveleslie Abney, C.B., Sir Benjamin Baker, K.C.M.G., LL.D., Prof. Isaac Bayley Balfour, William Thomas Blanford, Prof. George Carey Foster, Richard Tetley Glazebrook, Frederick Ducane Godman, John Hopkinson, Prof. Joseph Norman Lockyer, F.R.A.S., Prof. John Gray McKendrick, William Davidson Niven, William Henry Perkin, LL.D., Rev. Prof. B. Price, The Marquess of Salisbury, K.G., Adam Sedgwick, Prof. William Augustus Tilden.

AN international subscription for a testimonial to M. Pasteur on the occasion of his seventieth birthday on December 27 is to be opened by the French Academy of Science. Many men of science in all parts of the world will be glad to have this opportunity of expressing their high appreciation of M. Pasteur's labours.

SOME time ago we announced that Baron Nordenskiöld proposed to edit a number of very remarkable letters and memoirs of Carl Wilhelm Scheele, who died in 1786. It has now been decided that the one hundred-and-fiftieth anniversary of the birth of this great Swedish chemist, on December 9, shall be made the occasion of a brilliant celebration in his native country. A monument to Scheele is to be unveiled in Stockholm.

THE Naturforschende Gesellschaft of Danzig are issuing invitations to the celebration of the 150th anniversary of their foundation on January 2 and 3, 1893. The meetings will take place on the Monday evening in the Friedrich-Wilhelm-Schützenhaus, and on the Tuesday morning in the large hall of the Landeshaus, and the proceedings will wind up on the latter day with a dinner at 4 p.m. in the Schützenhaus.

PROF. EDWARD PRINCE, of Glasgow, has been offered the important post of Commissioner and General Inspector of Fisheries for Canada by the Dominion Government, and has accepted the office. Prof. Prince is well known as an authority in Fishery Science. He holds the chair of Zoology in St Mungo's College, Glasgow, and is President of the Anderson's College Scientific Society, and Vice-President of the Glasgow Natural History Society.

IT is announced that the King of Italy will open in person the International Medical Congress, which is to be held in Rome next year. An English committee is being formed to do what it can to secure the success of the Congress.

THE New York Academy of Sciences has organized a Biological Section, which is to hold monthly meetings. The opening meeting, at which Prof. H. F. Osborn presided, was held on October 17.

THE Victoria University has issued a list of University Extension lectures which are to be delivered in the course of the session 1892-93. They are to be given at many different centres, and include a wide range of subjects, among which various departments of physical and natural science hold a prominent place.

LIVERPOOL has sustained a real loss by the death of Mr. T. J. Moore, the late curator of the Liverpool Derby Museum. Mr. Moore had a wide knowledge of various branches of science, and did much to foster popular interest in the results of scientific inquiry. He died on October 31.

DURING the latter part of last week the weather continued very unsettled, the depressions which advanced from the Atlantic causing strong southerly winds or gales in many places, with frequent and heavy rain, while the temperature was uniformly high for the time of year, the daily maxima reaching nearly 60° in the southern parts, and exceeding 50° in the northern parts of the kingdom. On Saturday night a considerable decrease of temperature occurred, owing to the advance of an anti-cyclone which subsequently spread over most of the country; the southerly winds gradually disappeared, and were succeeded by calm and variable airs. In the early part of the present week fog became prevalent in many parts of England, but the weather was generally fair with frosts over the inland districts. On Tuesday, however, fresh depressions were passing along our north-west coasts, and rain squalls became general over Ireland and Scotland, while southerly winds again became prevalent. The *Weekly Weather Report*, issued on the 5th instant, showed that the rainfall greatly exceeded the mean in the east and south of England, while in Scotland and the northern parts of England the fall was below the average. Since the beginning of the year, the eastern, Midland, and north-west districts of England have had three inches of rainfall in excess of the normal amount, while in the south-west of England there is a deficiency of 7·6 inches.

THE U.S. Hydrographic Office has issued a chart showing the submarine cables of the world, with their principal land connections. The chart is described by *Goldthwaite's Geographical Magazine* as a necessity to foreign commerce. It contains tables for the computation of rates to any part of the world.

THE November number of the *Kew Bulletin* contains sections on coffee cultivation in British Honduras, the prune industry of California, sugar cane borers in the West Indies, sisal hemp industry in Yucatan, Liberian coffee in the Malay native states, and Bombay aloe fibre. There are also miscellaneous notes, from one of which botanists will be glad to learn that after many unsuccessful attempts to introduce living examples of the interesting plant, *Dischidia rafflesiana*, Kew has at last succeeded, thanks mainly to the generosity of Dr. Treub, the distinguished director of the Botanic Gardens, Java, who sent a plant of it in a Wardian case two years ago. This plant is now established and growing freely, producing numerous large pitcher-like leaves as well as the small normal hoya-like foliage. The morphological meaning of these pitchers has not yet been thoroughly worked out. "The species of dischidia all want a careful study. They cannot be described satisfactorily from dried specimens. The leaves change in form, and it is not ascertained in respect of many species whether they may or may not be converted into pitchers (ascidia)" (Hooker in "Flora of British India"). The plant at Kew is now under the special observation of Dr. Scott, hon. keeper of the Jodrell Laboratory. *D. bengalensis* is an old garden plant. It is cultivated at Kew in the Palm House. *D. rafflesiana* is for the present kept in one of the propagating pits.

AT the opening meeting of the twelfth session of the Junior Engineering Society on November 4, an excellent address was delivered by the president, Dr. John Hopkinson, F.R.S., on the cost of electric supply. His general conclusion on the subject is that to be ready to supply a customer with electricity at any moment he wants it, will cost those giving the supply not much less than £11 per annum for every kilowatt, that is for every unit per hour; and afterwards to give the supply will not cost very much more than ½d. per unit. The clear apprehension of this point Dr. Hopkinson believes to be essential to the commercial success of electric supply. It is hopeless, he thinks, for electricity to compete with gas in this country all along the line, if price is the only consideration. But with selected customers, electricity is cheaper than gas. Surely, he adds, it is the interest of those who supply electricity to secure such customers by charging them a rate having some sort of relation to the cost of supplying them.

AN address delivered by Prof. Virchow at the opening of the recent International Congress of Archæology at Moscow is printed in the current number of the *Revue Scientifique*. Prof. Virchow repeats in this address what he has often said before—that no trace of "the missing link" between man and the lower animals has been discovered either in the human skulls which are believed to be most ancient or in the physical organization of modern savages. He urges that the immediate task for anthropologists is to explain the origin of the existing human races, and to determine the causes by which these races, while retaining the power of hereditary transmission, have acquired their distinctive characteristics. At first sight, he says, it is easy to suppose that a dolichocephalic skull may be transformed into one of brachycephalic form; but it has not yet been shown that any dolichocephalic race has been actually transformed into a brachycephalic one, or *vice versâ*. Prehistoric anthropology ought, he thinks, to find methods which would facilitate the recognition of the types of ancient races and peoples, and enable us to find them again among the races and peoples of the present day. It ought also, as occasion offers, to collect data with regard to those strange individual cases about which theories, as Dr. Virchow holds, have been prematurely formed, and which should be kept in "the scientific baggage" until we have secured intermediate links which will render it possible for us to unite them in a series.

ACCORDING to an official report of Captain von François, the dromedaries which have been introduced into the German territories in South-west Africa in connection with the parcel post service have more than fulfilled the expectations that had been formed about them. The climate suits them, and they are not affected by any of the prevalent cattle diseases. On the road between Lehuititang and Geinab they were six days without water, and on the seventh day, at Geinab, they did not seem to be very thirsty. In stony regions their feet do not, like those of unshod horses or oxen, suffer any injury. When loaded with a weight of 250 pounds, a dromedary advances at much the same rate as an ox-waggon. The only drawback connected with these useful creatures is that they are rather costly.

MR. A. E. DOUGLASS, first assistant at the Boydun station of the Harvard College Observatory, Arequipa, contributes an interesting paper to *Science*, October 21, on indications of a rainy period in Southern Peru. There is evidence to show, he thinks, that for many thousands of years, going back far beyond the recognized period of human habitation, the climate of Peru has been very much as it is at present. That was preceded by a slow rise of the land out of the sea, which caused the climate to change from wet to dry. But under the wet climate the elevation of the land was still too great, and perhaps the duration of the epoch was too short, to produce a luxuriant tropical vegetation; otherwise there would be to-day extensive coal-fields. The wet climate, however, was sufficient greatly to alter the face of the country. Lake Titicaca was of enormous area, fed perhaps by the melting glaciers. In the almost continuous rainy season, huge turbid rivers roared and tumbled down these western slopes of the Cordillera, while on each mountain summit vast quantities of snow fell, only to pursue its way down the steep slopes, carving out valleys, building up ridges, and by its melting wearing out deep ravines, which grow smaller as they become lost in the broad level plain below. Under such luxuriance of moisture the valley of Arequipa must have teemed with animal and vegetable life, the barren hills to the south were clothed in green, and the desert of La Joya blossomed like a garden.

A CAPITAL annotated catalogue of the mammals collected by Dr. W. L. Abbott in the Kilima-Njaro region, East Africa, has been prepared by Mr. F. W. True, and printed in the Proceedings of the fifteenth volume of the U.S. National Museum, with several plates. Dr. Abbott has presented to the National Museum many African collections; but none of them, according to Mr. True, is of more interest than the collection of mammals. The specimens have been prepared with much care, the skins being almost invariably accompanied by the skulls and furnished with labels giving the locality and date of capture, sex, and other data. In determining the species Mr. True has found it necessary to depend almost exclusively on the literature, on account of the lack of specimens for comparison, but the identifications have been made with much care, and may, he thinks, on the whole, be relied upon. Several species apparently new are represented in the collection: *Dendrohyrax validus*, *Mus aquilus*, *Dendromys nigrifrons*, *Sciurus undulatus*, *Cephalophus spadix*. On one who has studied the North American mammalian fauna in detail, Mr. True says, the thought impresses itself that the condition of species, as regards variation, is different in the Ethiopian and Nearctic regions. In North America individual variation seems far less extensive than in Africa, while geographical variation appears to be more extensive and constant. In Dr. Abbott's collection great individual variation is especially apparent in the genera *Galago*, *Genetta*, and *Canis*. It is true that the species of the last-named genus everywhere present much individual variation, but in North America its chief variations appear to be geographical in character. The known range of several species is considerably extended by Dr. Abbott's labours.

AN important contribution to spectroscopy appears in No. 10 of Wiedemann's *Annalen* in the shape of a paper on the infra-red emission spectrum of the alkali metals, by Benjamin W. Snow. The method is distinguished by the adoption of a modified form of the bolometer and a very delicate galvanometer with quartz fibre suspension. The fibre, supplied by Prof. Boys, was 40 cm. long. With a scale at a distance of 3m., a deflection of 1mm. corresponded to a current of $1{\cdot}5 \times 10^{-11}$ amp. The spectra were obtained by means of a silicate-flint prism, so as to avoid the overlapping of the infra-red spectra which seems to be inevitable where gratings are used. Since no infra-red lines could be traced in the spectrum produced in the Bunsen or the oxy-hydrogen flame, the electric arc was used, the current being derived from the very uniform Berlin Central supply. The best arrangement for the arc was found to be a hole bored through the centre of the carbon, containing a "wick" of the compressed salt. The bolometer consisted of two platinum-thread resistances. A platinum wire embedded in silver was hammered flat, so as to have a breadth of 0·05mm. and a thickness of 0·00036mm. Two such threads were fastened side by side with shellac on a mica frame. One of them was blackened in a turpentine flame and exposed to the light, the other being covered. The difference of resistance produced by the incident rays was measured by a Wheatstone bridge arrangement, with a shunt contrivance for enlarging the scale of the bridge wire. The resistance of each of the platinum ribbons under ordinary conditions was 75 ohms. The other branches of the bridge were made of German silver wire. The slit of the spectrometer was adjusted to 0·1mm., corresponding to an angle of 1·68 minutes of arc in the spectrum, whilst the breadth of the platinum thread corresponded to an arc of 1′·6. The current through the bridge was maintained at one-fortieth ampere. In the measurement of the intensity of the lines, the energy of radiation was taken as proportional to the first throw. It was found that a standard candle at 1m. distance gave a throw of 150mm. A preliminary investigation of the carbon spectrum revealed a large number of bands reaching up to λ 20620, the principal less refrangible bands being between

7000 and 7700
7850 and 8600
9000 and 10000
10750 and 11600
13700 and 15000

These were made up of innumerable fine lines. It was also observed that the carbon spectrum vanished in comparison with the metallic spectrum as soon as the latter was brought into play. Of the five metals investigated, viz., sodium, potassium, rubidium, lithium, and cæsium, the two rarest were found to be specially rich in infra-red lines. Sodium showed maxima at 8180, 11270, 12400, and 18360, potassium at 7670, 10820, 11580, 12250, and 14610, lithium at 8070, rubidium at 7910, 9980, 13120, and 14760, and cæsium at 8380, a large one at 8820, and others at 9980, 13270, and 14530. Kayser and Runge's empirical law for the alkalies was confirmed for the infra-red of lithium and sodium, but not for the other three metals.

MR. ELLIOTT COUES, of the Smithsonian Institution, defends in *Science* the rule, in biological nomenclature, "once a synonym, always a synonym," for the form of which he believes himself to be in some degree responsible. He illustrates the real meaning of the aphorism in the following way. Let there be a genus *Smithia* in botany. Let a genus *Jonesia* then be named. Let *Jonesia* then be found to be the same genus as *Smithia*. Then the name *Jonesia* "lapses into synonomy," and cannot be thereafter applied to any other genus in botany. That is all that is meant by the saying "once a synonym always a synonym." In other words, if *Jonesia* is not good for what it originally meant, it is good for nothing; it is to be deleted absolutely, and cannot come into re-existence by transfer to any other genus. Mr. Coues shows that the same principle holds for all specific names within their respective genera. Example: Let there be a *Rosa Smithi*. Let some one then name a *Rosa Jonesi*. Let *R. Jonesi* be considered to be the same species as *R. Smithi*. Then there can never be a *R. Jonesi*; that is to say, no other species of *Rosa* can be specified as *Jonesi*. But, of course, if any one discovers, after this reduction of *Jonesi* to a synonym of *Smithi*, that what had been called *R. Jonesi* is a good species, then *Jonesi* revives as the name of *that* species; and the fact that it had been (erroneously) regarded as a synonym of *Smithi* is no bar to its use in its original sense.

THE Geological Survey of America has published a paper, by Mr. J. S. Diller, on the Geology of the Taylorville region in the Sierra Nevada, California, immediately north of the fortieth parallel. In this region there are eighteen sedimentary formations and seventeen eruptive masses. The former have a total thickness of 24,500 feet; 17,500 feet are probably Palæozoic, and 7000 feet are Mesozoic. Among the sedimentary rocks, one horizon in the Silurian, two in the Carboniferous, three or more in the Trias, and five in the Jura have been definitely recognized by fossils. Among the eruptives there is great variety. Their extravasation, beginning early in the Palæozoic, recurred vigorously in the Triassic and at the close of the Jurassic, and, finally, also in the Neocene and Pleistocene. The dioritic rocks of the region are a portion of the great granitoid mass of the upper Sierra Nevada, and are evidently eruptive, with well-defined contact phenomena in Triassic formations. Their eruption is certainly post-Triassic, and may have taken place immediately at its close or after the deposition of the Jurassic. There are at least four unconformities in the geologic column of the Taylorville region. During the greater part, if not the whole, of the Palæozoic, the sea covered the region now occupied by the northern portion of the Sierra Nevada. The great disturbance at the close of the Carboniferous may have been accompanied by an uplift, forming land during the early Triassic; but if so, it subsided and was ready to receive the deposits of the upper Triassic. The disturbance at the close of the Triassic formed no land in the northern Sierra region, but that which closed the Jurassic was accompanied by a great upheaval, excluding the sea to the western base of the Sierras. The general structure of the Taylorville region involves a synclinal and two limiting anticlinals. After the folds were overturned toward the north-east, the Grizzly anticlinal was affected by an overthrust fault in the same direction. The throw along this fault in the older strata is so much greater than in those of Jurassic age as to suggest that a large part of the displacement took place at the close of the Triassic, and was followed by movement on the same plane at the close of the Jurassic.

MR. STANFORD has issued an interesting and valuable contoured map of the county of London. The scale is three inches to a mile. The contour lines or lines of equal altitude are drawn at 25 feet intervals. The lowest contour is 25 feet above the level of the sea, ordnance datum, which is 12 feet 6 inches below Trinity high water. The whole of the alluvial flat lying below the lowest contour, or at a less altitude than 12 feet 6 inches above the river Thames (Trinity high-water mark), is covered by a dark brown tint.

THE third volume of reports upon the fauna of Liverpool Bay and the neighbouring seas has been issued. The reports have been written by members of the Liverpool Marine Biology committee and other naturalists, and edited by Prof. W. A. Herdman, F.R.S.

MESSRS. GURNEY AND JACKSON have published the *Zoological Record* for 1891. It is the twenty-eighth volume of the series. Mr. D. Sharp, F.R.S., has acted as editor, and has had the co-operation of many able zoologists. It is intended that in future the volume shall be published in August or September.

PHOTOGRAPHERS will read with great interest an admirable paper by Captain Abney, in the November number of the *Journal of the Camera Club*, on "shutters," which he describes as "a piece of apparatus which is the very joy and toy of the photographer's existence." The paper is fully illustrated.

THE Rev. L. A. Walker sends to the current number of the *Entomologist* some statistics of the entomology of the Hague, where he acted as chaplain during July. The entomology of Holland seemed to him very disappointing in number of species, and also in individuals in the great majority of cases; less productive, in fact, than the ordinary run of country places at home.

AT the meeting of the Linnean Society of New South Wales on September 28, Mr. R. Etheridge, junior, exhibited seeds of the "Bean-tree," possibly an *Erythrina*, from Macdonald ranges, Central Australia. The seeds are strung and used as necklaces by the aborigines, who use the wood of the same tree for producing fire by friction, and also for shields, on account of its lightness.

A COMPOUND of gold and cadmium of the composition AuCd has been isolated by Messrs. Heycock and Neville, and is described by them in the November number of the Journal of the Chemical Society. During the course of a series of experiments last year upon solutions of gold and cadmium in melted tin, it was observed that the amount of lowering of the freezing-point of the tin by the simultaneous introduction of gold and cadmium was considerably less than the sum of the effects which each of the two latter metals would produce alone. It was surmised that this difference must be due to combination between the gold and the cadmium. Moreover, the product of this combination appeared to be only sparingly soluble in tin, for a considerable quantity of a crystalline precipitate was produced, but owing to the difficulty of freeing it from the tin which solidified over it upon removal, the compound was not obtained in a state of sufficient purity to enable a definite conclusion concerning its composition to be arrived at. Messrs. Heycock and Neville now announce that they have succeeded in preparing the compound in an entirely different manner, and in isolating it in a state of comparative purity. The following is the best mode of procedure:—A piece of the hardest combustion tubing is sealed at one end and slightly bent in the middle so as to form a V-tube of very large angle. A quantity of pure gold is placed in the sealed limb, together with three or four times its equivalent of cadmium. The open end is then drawn off so as to enable the tube to be exhausted by means of the Sprengel pump. As high a vacuum as possible should be obtained, and the tube subsequently sealed. The apparatus is then arranged upon a combustion furnace in such a manner that the excess of cadmium when liquefied may run away from the alloy. When the cadmium first melts it is advisable to vigorously shake the tube so as to diffuse the gold well among the cadmium. The combination then occurs suddenly, accompanied by bright incandescence of the gold. When the larger excess of cadmium has been allowed to run away from the compound, the end of the tube containing the latter is heated for about five hours to a temperature about that of the softening of glass, when the remainder of the excess of cadmium distils regularly off, until towards the expiration of the five hours no further condensation occurs. The product thus left behind was found in three successive experiments to contain about 63·7 per cent. of gold, the percentage required for a compound of the composition AuCd. The compound of gold and cadmium thus obtained presents a silvery greyish-white appearance, is very brittle, and exhibits a crystalline fracture. The action of acids upon it is somewhat singular. Cold acids appear to be without material action upon it, but hot nitric or hydrochloric acid attacks it with great energy, the cadmium passing into solution and the gold being left in the shape of the original ingot.

THE additions to the Zoological Society's Gardens during the past week include a Purple-faced Monkey (*Semnopithecus leucoprymnus*) from Ceylon, presented by Mrs. Elgee; six Short-tailed Voles (*Arvicola agrestis*) from Scotland, presented by Mr. J. E. Harting, F.Z.S.; two Laughing Kingfishers (*Dacelo gigantea*) from Australia, presented by Mr. J. W. Hornsby; a Golden Eagle (*Aquila chrysaëtus*) from Labrador, presented by Mr. J. G. Baxter; a Jackdaw (*Corvus monedula*) British, presented by the Rev. H. W. Reynolds; three —— Geckos (*Gecko verticillatus*) from Burmah, presented by Mr. W. G. Bligh; two American Darters (*Plotus anhinga*), a Common Boa (*Boa constrictor*) from South America, four Bar-tailed Pheasants (*Phasianus reevesi* ♂ ♂ ♀ ♀) from China, purchased.

OUR ASTRONOMICAL COLUMN.

A BRIGHT COMET is announced in Andromeda, seventy seconds preceding Struve 72.

COMET BARNARD (OCTOBER 12).—The following is a continuation of the ephemeris we gave last week of Comet Barnard taken from *Astronomische Nachrichten*, No. 3125.

Ephemeris for 12h. Berlin M.T.

1892.	R.A.			Decl.		Log *r*.	Log Δ.	Br.
	h.	m.	s.	°	′			
Nov. 11	20	46	49	+2	33·3			
12		49	40	2	15·7			
13		52	32	1	58·3	0·2262	0·1648	0·97
14		55	25	1	41·2			
15	20	58	19	1	24·4			
16	21	1	14	1	7·9			
17	21	4	9	+0	51·6	0·2250	0·1713	0·94